

Claims

1. (currently amended) A method [[of]] for producing heat energy, comprising the steps of:

providing a container for receiving an electrolyte composition, a cathode and an anode; forming an electrolyte composition comprising D₂O and sulfuric acid; placing a sufficient amount of the electrolyte composition in the container to at least partially cover a platinum or titanium metal cathode ~~made from a metal selected from the group consisting of palladium, platinum and titanium~~ and to at least partially cover an inert anode situated inside the container;

connecting the cathode and anode to a source of electricity; and

applying a current density across the cathode and anode of at least 0.55A/cm².

2. (canceled)

3. (currently amended) The method of claim 1 wherein, the electrolyte during the application of voltage, the electrolyte is held within a container and wherein said the container bounds a space above the electrolyte, [[said]] the space providing a region for [[the]] recombining [[of]] gases produced during the electrolysis.

4. (currently amended) The method of claim 1 wherein a catalyst is provided within [[said]] the region catalyzing the recombining of gases produced by the electrolysis.

5. (canceled).

6. (currently amended) The method according to claim [[5]] 1 wherein the size of the cathode is about 1 cm².

7. (original) The method according to claim 1 wherein the cathode is made from titanium.

8. (original) The method according to claim 1 wherein the inert anode is a platinum anode.

9. (original) The method according to claim 1 wherein the electrolyte composition consists essentially of D₂O and about 15% sulfuric acid by volume.

10. (currently amended) The method according to claim 9 wherein the cathode is ~~made from palladium or a titanium metal cathode~~.

11. (currently amended) A method [[of]] for producing heat energy, comprising ~~the steps of:~~

providing a container for receiving an electrolyte composition, a cathode and an anode;
forming an electrolyte composition comprising D₂O and sulfuric acid;
placing a sufficient amount of the electrolyte composition in a container to at least partially cover a titanium metal cathode ~~made from a metal selected from the group consisting of nonhydride forming metals~~ and to at least partially cover an inert anode situated inside the container;

connecting [[said]] the cathode and anode to a source of electricity; and
applying a voltage of about 3.5 volts across the cathode and anode.

12. (currently amended) A method [[of]] for producing heat energy, comprising ~~the steps of:~~

providing a container for receiving an electrolyte composition, a cathode and an anode;
forming an electrolyte composition consisting essentially of D₂O and 15% by volume sulfuric acid;

placing a sufficient amount of the electrolyte composition in a container to at least partially cover a ~~palladium or~~ titanium cathode and an inert anode situated inside the container, wherein the container bounds a space above [[said]] the electrolyte composition;

connecting [[said]] the cathode and anode to a source of electricity;
applying a voltage across the cathode and anode; and

providing a catalyst within the space above the electrolyte composition to catalyze the recombination of gases produced by the electrolyte.